

## ABSTRACT OF THE DISCLOSURE

This invention relates an optoelectronic material comprising a uniform medium with a controllable electric characteristic; and semiconductor ultrafine particles dispersed in the medium and having a mean particle size of 100 nm or less, and an application device using the same. This invention also relates to a method of manufacturing an optoelectronic material by irradiating a laser beam onto a first target of a semiconductor material, placed in a reaction chamber in low pressure rare gas ambient, and a second target of a medium material with a controllable electric characteristic, placed in the reaction chamber, condensing/growing a semiconductor material ablated from the first target to be collected as ultrafine particles having a mean particle size of 100 nm or smaller on a substrate placed in the reaction chamber, and condensing/growing a medium material ablated from the second target to be collected on the substrate placed in the reaction chamber, thus forming an ultrafine-particles dispersed layer having semiconductor ultrafine particles dispersed in the medium on the substrate.